

## CLAIMS

What is claimed is:

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1. A process implemented in a network of client browser and application server computers for interactive, collaborative group decision making among multiple participants, the process comprising the steps of:

10 specifying elements of a participant survey process, the survey elements each relating to one or more spheres of influence objects to be used in a decision making process;

collecting survey response data for the survey elements from multiple participants using a survey process;

15 specifying an automatic logic model process for facilitating group decisions according to decision logic functions given the survey response data as inputs;

automatically and continuously analyzing the survey response data to provide a compiled collaborative group decision, reflecting changes to the survey response data on a real time basis;

20 automatically and continuously identifying, collecting and compiling opportunities for action to improve organizational performance; and

automatically tracking changes and monitoring performance to provide guidance in managing the change process.

25 2. A process as in claim 1 additionally comprising the step of:  
presenting a real time interactive display of results of the analyzing step.

3. A process as in claim 1 wherein the survey response data is categorized by participant class.

4. A process as in claim 3 where in step (e) provides the consolidated results display to participants, and individual participants are not permitted to review survey results for other individual participants without their consent.

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5. A process as in claim 1 wherein the group decision making process is a framework for organizational decision making.

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6. A process as in claim 1 wherein the spheres of influence elements are selected from a group consisting of leadership, marketing, strategy, finance, operations, sales, structure, culture, development, staffing, and customer elements and populated with data from a questionnaire.

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7. A dynamic multidimensional array for the purpose of representing information pertaining to the measurement of human reasoning when confronted with whole systems change

wherein determinants of change are represented as influence objects;

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wherein the determinants are arranged in a logical spatial display with respect to one another; and

wherein the pattern of the determinants is statistically derived from frequency distribution of the interactions reported among the determinants through a procedure for classifying categorizing and scoring data.

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8. An array as in claim 7 wherein the configuration of sphere objects is displayed as circles

9. An array as in claim 8 wherein the sphere objects are populated via a distributed data network system input interface.

5 10. An array as in claim 8 wherein higher order relationships between the spheres are represented in a spatial array.

11. An apparatus to collect and display human perceptions in the context of a real time dynamic model of a network of event nodes comprising:

10 a data object having several functions enabled by the same icon, including an input and a state representing data that incorporates a trigger mechanism, a link pointing to other object, a control switch to enable various functions shown on the array of influence objects, and an output message that is visualized as it is being passed to the database objects to encode data to indicate a state of change of an influence object.  
15 activity.

12. An apparatus as in claim 11 wherein the mechanism encodes three possible states of change of the activity.

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13. An apparatus as in claim 12 wherein a graphical rendering of the switching mechanism is a representation of a traffic light as red yellow and green lights.

25 14. An apparatus as in claim 11 wherein the data object represents a direction of change towards a desired or undesired state.

15. An apparatus as in claim 11 wherein the data object enables a perception of that state of change prior to potentially catastrophic events or advantageous opportunities (prompting adaptive rather than reactive behavior).

5           16. A graphic display object for showing proportional distribution of responses in a survey data structure,

displayed as a circle with proportional display of red, yellow, green and blue colors alone or in any combination, typically ordered so that red appears at the top of the circle, followed by yellow, green and blue at the bottom of the circle.

10           17. The graphic display object as in claim 16 wherein the object is used to report the distribution of data which has been color-coded or shaded according to differentiated patterns.

15           18. The graphic display object of claim 16 wherein the object further comprises:

a stacked bar graph in the form of a circle, where the x axis extends horizontally along the full diameter of the circle and the y axis extends vertically, and then displays data within the circle so the data is proportionally represented within the circle.

20           19. The graphic display object of claim 16 wherein a proportion of different patterns or colors is determined according to the area of the circle and then displayed them stacked along the horizontal axis.

25           20. The graphic display object of claim 16 representing compiled state information from an individual or groups of individuals to display the proportion of respondents according to their choice

21. The graphic display object of claim 16 additionally comprising:  
solid colors or combinations of colors in the object arranged along a top to  
bottom axis.

5           22. An apparatus to collect and display facts that support human perceptions in  
the context of a real time dynamic model of a network of event nodes comprising:  
a data object having an input and a state used to encode data to indicate the state  
of facts that support perceptions an activity.

10           23. An apparatus as in claim 22 wherein the mechanism encodes three possible  
states of change related to the factual data.

15           24. An apparatus as in claim 23 wherein a graphical rendering of the state of  
the data objects is a representation of links between objects displayed as red (or black)  
hammerhead lines, green (or black) solid lines with or without arrowheads, or dashed  
blue (or black) lines with or without arrowheads.

20           25. An apparatus as in claim 22 wherein the object represents a direction of  
change towards a desired or undesired state.

26. An apparatus as in claim 22 wherein the object enables the detection of the  
state of change prior to potentially catastrophic events or advantageous opportunities.

25           27. The graphic display object of claim 16 wherein the sphere is bisected along  
an interior portion thereof to further illustrate relationships among survey responses..

28. A method as in claim 1 wherein the process is used as a conflict resolution  
procedure.

29. A data processing apparatus used to collect and display suggestions or opportunities for action in the context of a real time dynamic model of a network of event nodes the apparatus, comprising:  
5 a data object having an input and states representation to encode data to indicate a change in status of an opportunity.

30. An apparatus as in claim 29 wherein the state mechanism is used to encode  
10 three possible states of change of the opportunity.

31. An apparatus as in claim 29 wherein a graphical rendering of the state mechanism is a representation of links between objects displayed as dotted or black lines with or without arrowheads  
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32. An apparatus as in claim 29 wherein the object represents a direction of change towards a desired or undesired state.

33. An apparatus as in claim 29 wherein the object enables the detection of the  
20 state of change prior to potentially catastrophic events or advantageous opportunities.

34. An apparatus used to collect and display tasks selected for action in the context of a real time dynamic model of a network of event nodes comprising:  
a data object having an input and state mechanism used to encode data to  
25 indicate a change in status of an action.

35. An apparatus as in claim 34 wherein the mechanism encodes a number of different states of change related to the action according to data displayed for different process steps.

5           36. An apparatus as in claim 34 wherein a graphical rendering of the state mechanism is a representation of links between objects displayed as lines composed of alternating dots and dashes with or without arrowheads.

10           37. An apparatus as in claim 34 wherein the object represents a direction of change towards a desired or undesired state.

15           38. An apparatus as in claim 34 wherein the object enables the detection of the state of change prior to potentially catastrophic events or advantageous opportunities (prompting adaptive rather than reactive behavior).

20           39. An apparatus sued to collect and display knowledge assets as combinations of connections and/or opportunities for action in the context of a real time dynamic model of a network of event nodes comprising:

            a data object having an input and state mechanism to encode data to indicate a change in status of knowledge assets.

            40. An apparatus as in claim 39 wherein the mechanism encodes three possible states of change of the knowledge assets.

25           41. An apparatus as in claim 39 wherein a graphical rendering of the switching mechanism is a representation of links between three spheres displayed as solid lines with or without arrowheads.

42. An apparatus as in claim 39 wherein the object represents a direction of change towards a desired or undesired state.

5 43. An apparatus as in claim 39 wherein the object enables the detection of the state of change prior to potentially catastrophic events or advantageous opportunities that could affect the status of knowledge assets.

10 44. A data processing system in which computerized data objects are used to encode human response information so that such information can be utilized by a distributed network of data processing devices, the system thus providing an actionable feedback system to improve the reasoning of participants in an organizational decision making process.

15 45. A system as in claim 44 wherein the participants may view a graphical representation of their collective reasoning.

46. A system as in claim 45 in which the data objects represent information for participants derived from self-assessment questions.

20 47. A system as in claim 45 in which the data objects represent information for participants derived from their own compiled data.

48. A system as in claim 45 in which the data objects represent information for users of the system derived from a database of prior records.

25 49. A system as in claim 45 in which participants can monitor and track change in patterns of interaction among influence objects.



50. A system as in claim 45 in which participants can update the database as the state of events change.

5 51. A system as in claim 45 in which participants can update the database with new survey responses.

10 52. A system as in claim 44 wherein participants may view a measure of the evolution of their collective reasoning over time from an historical database.

53. A system as in claim 52 in which the data objects represent historical data for users of the system derived from self-assessment.

15 54. A system as in claim 52 in which the data objects represent historical data for users of the system derived from patterns detected in their own compiled historical data.

20 55. A system as in claim 52 in which the data objects represent historical information for users of the system derived from historical data other than their own.

56. A system as in claim 52 in which participants can monitor and track changes in the historical database.

25 57. A system as in claim 52 which tracks changes in the historical data as actions get completed or blocked.

58. A system as in claim 52 used to track changes to the historical database from new survey responses.

59. A system as in claim 52 wherein participants can get confidential feedback that shows their views in relation to other individual who have given permission to view their data.

60. A system as in claim 59 wherein participants can get confidential feedback that shows their views in relation to other organizational groups.

61. A system as in claim 59 wherein participants can get confidential feedback that shows their views in relation to work systems or business units.

62. A system as in claim 59 wherein participants can get confidential feedback that shows their data in relation to cross-functional teams.

63. A system as in claim 59 wherein participants can get confidential feedback that shows their data in relation to executive decision-makers.

64. A system as in claim 59 wherein participants can get confidential feedback that shows their data in relation to all the other members of the organization.

65. A process for aiding collaborative decision making, the process executing within a data processing system, comprising the steps of:

gathering individual survey responses to survey elements from each member of a group of people involved in the collaborative decision making;

representing the individual survey responses in an influence object format that represents both the individual survey responses as well as relationships between the individual responses; and

providing a graphical display of the state of individual survey responses as represented in the influence objects and relationships between the influence objects using a common graphical model.

66. A method as in claim 65 wherein the step of gathering survey responses is performed in a network of computers, with the members of the group providing their individual survey responses through respective client computer systems.

67. A method as in claim 65 wherein the survey elements incorporate an open-ended question model that encourages survey responses that can be categorized in predefined possible responses.

68. A method as in claim 65 additionally comprising the steps of:  
specifying an automatic logic model process is specified according to decision logic functions, the logic model process being used to analyze the influence objects.

69. A method as in claim 65 wherein subject areas for the influence objects are selected from a lexicon consisting of key words for leadership, marketing, strategy, finance, operations, sales, structure, culture, development, staffing and customer activities.

70. A method as in claim 65 wherein the common graphical model further comprises an influence perception map that includes a graphical display of the

state of the influence objects having a predetermined spatial pattern with respect to one another.

71. A method as in claim 70 wherein the spatial pattern for visualizing the influence objects has been statistically derived from a frequency distribution of interactions reported.

72. A method as in claim 70 wherein the graphical representation of the influence objects are spheres.

73. A method as in claim 70 wherein the states of the individual influence objects are represented as different colors.

74. A method as in claim 73 wherein the states of the individual influence objects are represented as a traffic light, wherein the the colors red, yellow and green represent, respectively, a range of responses to survey questions indicating a status of trouble, status quo or no problems reported.

75. A method as in claim 70 wherein relationships between the influence objects are graphically represented as links between the graphical representations of the corresponding influence objects.

76. A method as in claim 75 wherein the links represent a rate, level or direction of interactivity between specified influence objects.

77. A method as in claim 75 wherein the links are rendering graphically as a line with varying thicknes, wherein the thickness of the line indicates how many survey responses fall into a particular category.

78. A method as in claim 75 wherein the links are selected from the group consisting of a positive link or connection, and a negative link or block.

5 79. A method as in claim 78 wherein the positive links are represented as a black line and a negative link as a black hammer.

80. A method as in claim 70 additionally comprising the step of:

10 providing a reflection map that represents a compilation of two or more influence maps, wherein the states of the compiled influence objects are responses graphically as spheres, with portions of the spheres colored to indicate the number of responses of a particular type for each possible state of the corresponding influence object.

15 81. A method as in claim 70 additionally comprising the step of:

providing a hemisphere map that represents a level of congruence or divergence between two influence maps, different data sets, the hemisphere map dividing a graphical representation of a sphere along a vertical diameter into two hemispheres, with a hemisphere devoted to each data set.

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82. A method as in claim 81 wherein portions of the hemispheres are colored to indicate the number of responses of a particular type for each possible state of the corresponding influence object from the respective data set.

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83. A method as in claim 75 additionally comprising the step of:

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84. A method as in claim 83 wherein the varying visual attribute of the link is selected from the group consisting of line thickness and line color.

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